REMARKS/ARGUMENTS

The Office Action dated March 28, 2005, has been reviewed in detail and the application has been amended in the sincere effort to place the same in condition for allowance.

Applicant retains the right to pursue broader claims via a continuing application under 35 U.S.C. § 120.

Amendments to the Claims:

Claims 1, 2, 10 and 11 have been amended herein. An additional limitation has been added to Claims 1 and 10, and for clarity and continuity purposes Claims 2 and 11 have been amended. Support for the changes to these claims can be found in the specification on page 4, lines 5-8. Additionally, the word "heated," which was inadvertently included in the preamble of Claim 10, has been deleted herein. Support for this change is evidenced by the limitation in this same claim which states "presenting the heated sensor to one of the at least one volatile organic compound in a heated oxidant-containing media and the at least one volatile organic compound in an unheated oxidant-containing media" (emphasis added).

Objection to the Disclosure:

In paragraph 1 of the outstanding Office Action the Examiner objected to the disclosure. Specifically the Examiner stated, "The disclosure is objected to because of the following informalities: the status of the parent application needs to be updated."

In response thereto, the specification has been amended herein to include the current status of the parent application (i.e., "now abandoned").

Additionally, it should be noted that a typographical error on page 4 of the specification has also been corrected herein.

Rejection Under 35 U.S.C. 102(b):

In paragraph 3 of the outstanding Office Action, the Examiner rejected Claims 1, 3, 10 and 12 as being anticipated by Timoshenko (U.S. Patent No. 4,164,699). Specifically, the Examiner stated:

> In the patent Timoshenko teaches a thermochemical combustible gas detector having a resistor bridge including a thermistor which is sensitive to combustible gases and a thermistor which compensates the effects of unmeasured parameters and components upon the former thermistor. The proposed thermochemical combustible gas detector comprises a resistor bridge (1) shown in

figure 1. Two adjacent arms of said resistor bridge include thermistors (2,3). One thermistor (2), is sensitive to the presence of combustible gases in the atmosphere, whereas the other thermistor (3) is intended to compensate for the effects of unmeasured parameters and components of the atmosphere upon the sensitive thermistor. The two remaining adjacent arms of said bridge include conventional resistors (4,5). The sensitive thermistor may be a coil, preferably of platinum wire, which at a certain temperatures acts as a catalyst for combustible gases and vapors. The compensating thermistor is also a platinum wire coil. In order to avoid the catalytic action of this thermistor, it is coated with a catalytically inert compound. The same effect can be attained by making this thermistor from thick wire in order to reduce its temperature to a point at which platinum is inert, or by using a greater winding pitch in this thermistor compared to that of the sensitive thermistor. In order to bring down the working temperature of the sensitive thermistor and prolong its service life, the thermistor can be coated with a thin film of a catalytically active compound, which accounts for a lower oxidation temperature of combustible gases, as compared to platinum. In this case the compensating thermistor needs no coating. An alternative embodiment for the thermistors is platinum coils arranged either inside or on the surface of cylinders of a porous material, preferably active aluminum oxide. The coils can also be arranged in spherical granules of the same porous material. In order to ensure catalytic activity of the sensitive thermistor, it is treated with a catalytic compound.

The Timoshenko reference's disclosed thermistors, as noted by the Examiner, are described as coils, preferably of platinum wire. Additionally, the Timoshenko reference states:

"In order to bring down the working temperature of the sensitive thermistor 2 and prolong its service life, the thermistor 2 can be coated with a thin film of a catalytically active compound which accounts for a lower oxidation temperature of combustible gases, as compared to platinum. In this case the compensating thermistor 3 needs no coating.

An alternative embodiment of said thermistors is platinum coils arranged either inside or on the surface of cylinders of a porous material, preferably active aluminum oxide. The coils can also be arranged in spherical granules of the same porous material. In order to ensure catalytic activity of the sensitive thermistor, the latter is treated with a catalytic compound." (col. 3, lines 42-55)

Notably, as referenced by the Examiner in paragraph 5 of the outstanding Office Action: "Timoshenko does not teach any particular type of catalyst or the resistance of the thermistors" (emphasis added).

It is respectfully submitted that the Timoshenko reference does not anticipate the present invention as recited in amended Claim 1.

Claim 1 recites:

A method for detecting the presence of at least one volatile organic compound at a temperature lower than the autoignition temperature of said at least one compound in a heated oxidant-containing media comprising the steps of:

providing a sensor comprising an uncoated reference thermistor and a coated sensing thermistor, wherein said coating comprises a catalyst comprising platinum and tin oxide;

presenting the sensor to the at least one volatile organic compound in the heated oxidant-containing media, and thereby heating the sensor; and

measuring the change in temperature of the coated sensing thermistor as compared to the temperature of the reference thermistor, as the at least one volatile organic compound is converted into carbon dioxide and water.

Because the Timoshenko reference does not disclose "said coating comprises a catalyst comprising platinum and tin oxide" it is respectfully submitted that this reference does not anticipate the present invention as recited in Claim 1. Additionally, this same limitation has now been added to independent Claim 10, so for the same reasons Claim 10 is also believed to distinguish over the Timoshenko reference. Because Claims 3 and 12 depend from independent Claim 1 and 10, respectively, they too are believed to fully distinguish from the Timoshenko reference.

Based on the above, reconsideration and withdrawal of the current rejection are respectfully requested.

Rejection Under 35 U.S.C. 103(a):

In paragraph 5 of the outstanding Office Action the Examiner rejected Claims 2, 4-9, 11, and 13-18 under 35 U.S.C. 103(a) as being unpatentable over Timoshenko as applied to Claims 1, 3, 10 and 12, and further in view of McNully (U.S. Patent No. 4,313,907) or Wind (U.S. Patent No. 5, 804,703). The Examiner stated:

Timoshenko does not teach any particular type of catalyst or the resistance of the thermistors.

In the patent McNally teaches a combustible gas detection apparatus that is substantially similar to Timoshenko. Column 1, lines 9-51 teach that combustible gases are an ever present danger that need to be sensed. These combustible gases include a myriad of different chemical compounds, for example aliphatic hydrocarbons such as methane, aromatic hydrocarbons such as benzene, alcohols such as methanol, esters such as butyl acetate, ethers such as ethylene oxide, and mixtures such as gasoline. Column 1, lines 52-60 teach a catalyst made of palladium, palladium oxide and nickel oxide as a catalyst for use in a detector employing a catalyzed sensitive element and an uncatalyzed element for measuring combustible gases.

In the patent Wind teaches a circuit for a combustible gas sensor that is substantially similar to the Timoshenko device. Column 2 lines 42-48 teach that sensing compounds in the exhaust path of an internal combustion engine, a catalyst (22) used by the sensor may be any noble metal or other material such as platinum palladium, rhodium, etc. or combinations of such materials capable of stimulating reactions between unburned or partially burnt hydrocarbons and oxygen in the engine exhaust gases.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the know catalysts of McNally or Wind in the Timoshenko method because of

their known sensitivity to combustible gases as shown by McNally and Wind. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a thermistor resistance optimal for the sensing environment because as held by the Court the discovery of an optimum value of a known result effective variable without producing any new or unexpected results is within the skill of the routineer in the art (*In re Boesch*, 205 USPQ 215 (CCPA 1980)) and the selection of a known material based on its suitability for the intended use is within the skill of a routineer in the art (*In re Leshin*, 125 USPQ 416 (CCPA 1960)).

As noted by the Examiner the McNally reference teaches a catalyst made of palladium, palladium oxide and nickel oxide, and the Wind reference teaches a catalyst used by a sensor consisting of any noble metal or other material such as platinum palladium, rhodium, etc. or combinations of such materials.

It is respectfully submitted that no combination of the Timoshenko reference with either the McNully or Wind reference would result in the present invention. Thus, the Applicant's invention, as recited in Claims 2, 4-9, 11, and 13-18 is not rendered obvious by the applied art.

As explained above, in reference to the 35 U.S.C 102(b) rejection, the two independent Claims, Claims 1 and 10, both distinguish from the Timoshenko reference because the Timoshenko reference does not disclose the limitation of "said coating comprises a catalyst comprising platinum and tin oxide." Because neither the McNully nor Wind reference teach this limitation, no combination of the Timoshenko, McNully or Wind references renders the pending claims unpatentable.

Based on the above, reconsideration and withdrawal of the present rejection are respectfully requested.

Art Made of Record:

Applicant agrees that the prior art made of record, either alone or in combination, does not defeat the patentability of the present invention.

CONCLUSION

It is submitted that the Applicant has submitted a new and unique Method For The Detection Of Volatile Organic Compounds Using A Catalytic Oxidation Sensor. In view of the above, it is submitted that Claims 1-18 are in condition for allowance. Therefore, it is requested that a Notice of Allowance be issued at an early date.

Respectfully submitted,

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